

DEPARTMENT OF COMMERCE  
BUREAU OF STANDARDS

STAPLE PORCELAIN (ALL-CLAY)  
PLUMBING FIXTURES

COMMERCIAL STANDARD CS4-29



ELIMINATION OF WASTE  
Through  
SIMPLIFIED COMMERCIAL PRACTICE

UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1929

Below are described some of the series of publications of the Department of Commerce which deal with various phases of waste elimination.

**Simplified Practice Recommendations.**

These present in detail the development of programs to eliminate unnecessary variety in sizes, dimensions, styles, and types of over 100 commodities. They also contain lists of associations and individuals who have indicated their intention to adhere to the recommendations. These simplified schedules, as formulated and approved by the industries, are indorsed by the Department of Commerce.

**Commercial Standards.**

These are developed by various industries under a procedure similar to that of simplified practice recommendations. They are, however, primarily concerned with considerations of grade, quality, and such other characteristics as are outside the scope of dimensional simplification.

**American Marine Standards.**

These are promulgated by the American Marine Standards Committee, which is controlled by the marine industry and administered as a unit of the division of simplified practice. Their object is to promote economy in construction, equipment, maintenance, and operation of ships. In general, they provide for simplification and improvement of design, interchangeability of parts, and minimum requisites of quality for efficient and safe operation.

List of the publications in each of the above series can be obtained by applying to the Commercial Standards Group, Bureau of Standards, Washington, D. C.

DEPARTMENT OF COMMERCE  
BUREAU OF STANDARDS

**STAPLE PORCELAIN (ALL-CLAY)  
PLUMBING FIXTURES**

**COMMERCIAL STANDARD CS4-29**

**Effective Date**

For New Production, July 1, 1929

For Existing Manufacturers' Stock, January 1, 1930



UNITED STATES  
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## COMMERCIAL STANDARD CS4-29

### ACCEPTED BY

#### ASSOCIATIONS

American Ceramic Society.  
American Society of Sanitary Engineering.  
Associated General Contractors of America.  
Central Supply Association.  
Eastern Supply Association.  
National Association of Master Plumbers.

#### INDIVIDUALS

Allegheny Tube & Steel Co., St. Louis, Mo.  
American Plumbing & Steam Supply Co., Tacoma, Wash.  
American Plumbing Manufacturing Co., Brooklyn, N. Y.  
American Tin & Terne Plate Co., Philadelphia, Pa.  
Bailey-Farrell Manufacturing Co., Pittsburgh, Pa.  
Bailey-Lebby Co., Charleston, S. C.  
Baker Plumbing Co., Beaumont, Tex.  
Baltimore Plumbing Supply Co., Baltimore, Md.  
Beaver Refrigerator & Potteries Co., New Brighton, Pa.  
Beckman Bros., Des Moines, Iowa.  
Bethlehem Plumbing Supply Co., Bethlehem, Pa.  
Biggs Pump & Supply Co., La Fayette, Ind.  
Bowles Co., Seattle, Wash.  
Bradley Supply Co., Chicago, Ill.  
Brattleboro Heating Supply Co., Brattleboro, Vt.  
Bridgeport Plumbing Supply Co. (Inc.), Bridgeport, Conn.  
Bright Hardware Co., George, Pottsville, Pa.  
Cedar Rapids Pump & Supply Co., Cedar Rapids, Iowa.  
Central Metal & Supply Co., Baltimore, Md.

Central Supply Co., Minneapolis, Minn.  
Channel Co., Long Beach, Calif.  
Clearfield Plumbing Supply Co. (Inc.), Philadelphia, Pa.  
Cochran Sargent Co., Sioux Falls, S. Dak.  
Cole Supply Co., George H., Troy, N. Y.  
Concord Pipe Co., Concord, N. H.  
Cooper Sanitary Manufacturing Co., Philadelphia, Pa.  
Cordes Supply Co., Milwaukee, Wis.  
Crane Co., Chicago, Ill.  
Cunningham Plumbing Supply Co., (Inc.), Washington, D. C.  
Dalton Supply Co., Clarks Summit, Pa.  
Dalziel Moller Co., San Francisco, Calif.  
Dengel Co., F. R., Milwaukee, Wis.  
Deschauer Co., S., Cicero, Ill.  
Detroit Brass & Malleable Works, Detroit, Mich.  
Detroit Lead Pipe Works, Detroit, Mich.  
Dubuque Supply Co. (Inc.), R. A., St. Louis, Mo.  
Eastern Plumbing Supply Co., Hartford, Conn.  
Eastern Sanitary Supply Co., Baltimore, Md.  
Egyptian Supply Co., Christopher, Ill.  
Fabian-Goodman Co., Philadelphia, Pa.  
Fineberg & Co., Morris M., Boston, Mass.  
Florida Automobile & Gas Engine Co., Tampa, Fla.  
Fords Porcelain Works, Perth Amboy, N. J.  
Galloup Pipe & Supply Co., Battle Creek, Mich.  
Geddes Co., Henry B., West Orange, N. J.  
General Ceramics Co., New York, N. Y.  
Haas Co., Philip, Dayton, Ohio.

Hajoca Corporation, Philadelphia, Pa.  
 Harper & Reynolds, Los Angeles, Calif.  
 Harvey's Sons Manufacturing Co., A., Detroit, Mich.  
 Hess Co., Charles, New York, N. Y.  
 Hoffmann & Billings Manufacturing Co., Milwaukee, Wis.  
 Howden Co., J. J., Muskegon, Mich.  
 Howe Supply Co., W. B., St. Joseph, Mo.  
 Hubbard Co., S. B., Jacksonville, Fla.  
 Hughes & Co., Spokane, Wash.  
 Hughes Supply Co., Mansfield, Ohio.  
 Hunting Co., Rochester, N. Y.  
 Ideal Supply Co., Somerville, Mass.  
 Jewett Refrigerator Co., Lackawanna, N. Y.  
 Kalispell Mercantile Co., Kalispell, Mont.  
 Keiser-Van Leer Co., Bloomington, Ill.  
 Kinsey Co., H. P., Easton, Pa.  
 Kinsey & Mahler Co., Peoria, Ill.  
 Knapp Supply Co., Muncie, Ind.  
 Koepsell Co., J. J., Sheboygan, Wis.  
 Kokomo Supply Co., Kokomo, Ind.  
 Krauss Sanitary Co., Baltimore, Md.  
 Lane, B. Franklin, Pleasantville, N. Y.  
 Malone Plumbing Supply Co., Pittsburgh, Pa.  
 Manchester Supply Co., Manchester, N. H.  
 Martin Metal Manufacturing Co., Wichita, Kans.  
 May Supply Co., Anderson, Ind.  
 Merkel Bros. Co., Cincinnati, Ohio.  
 Messer Co. (Inc.), James A., Washington, D. C.  
 Midland Pipe & Supply Co., Chicago, Ill.  
 Mineola Plumbing Supply Co. (Inc.), Mineola, N. Y.  
 Missouri Water & Steam Supply Co., St. Joseph, Mo.  
 Monument Pottery Co., Trenton, N. J.  
 Mott Co. (Inc.), J. L., Trenton, N. J.  
 Murphy Supply Co., Green Bay, Wis.  
 Nelson Co., Detroit, Mich.  
 Nelson Manufacturing Co., N. O., St. Louis, Mo.  
 Noland Co. (Inc.), Roanoke, Va.  
 Norman, Percy A., Tacoma, Wash.  
 North Philadelphia Supply Co. (Inc.), Philadelphia, Pa.  
 Norwich Plumbing Supply House (Inc.), Norwich, Conn.  
 Ohio Plumbers Supply (Inc.), Toledo, Ohio.  
 Orange County Plumbing Supply Co., Middletown, N. Y.  
 Palisades Park Lumber & Supply Co., Palisades Park, N. J.  
 Palmer Supply Co., Seattle, Wash.  
 Park & McKay, Detroit, Mich.  
 Peerless Co. of Washington, Seattle, Wash.  
 Peerless-Utah Co., Salt Lake City, Utah.  
 Penn Yo Plumbing Supply Co., Buffalo, N. Y.  
 Rayl Co., The, Detroit, Mich.  
 Reid Plumbing Co., Tacoma, Wash.  
 Rendelstein (Inc.), Saul, Brooklyn, N. Y.  
 Richmond Sanitary Co. (Inc.), San Francisco, Calif.  
 Rochester Plumbing Supply Co. (Inc.), Rochester, N. Y.  
 Roe (Inc.), William S., Newark, N. J.  
 Rom Co., Robert, Milwaukee, Wis.  
 Saltser & Weinsier (Inc.), Brooklyn, N. Y.  
 Sands & Sons Co., A. B., New York, N. Y.  
 Santa Monica Plumbing Supply Co., Santa Monica, Calif.  
 Shafer Co. (Inc.), W. G., Syracuse, N. Y.  
 Shawb Bros. Co., New York, N. Y.  
 Silver & Sons (Inc.), M., Los Angeles, Calif.  
 Sloan Valve Co., Chicago, Ill.  
 Small Co., P. A. S., York, Pa.  
 Somerville Co., Thomas, Washington, D. C.  
 South Bend Supply Co., South Bend, Ind.  
 Stulsaft Co., M., San Francisco, Calif.  
 Sturgis Supply Co., Sturgis, Mich.  
 Sullivan County Plumbing & Heating Supply Co. (Inc.), Liberty, N. Y.  
 Summers Hardware Co., Johnson City, Tenn.

Swank Hardware Co., Johnstown, Pa.	Western Electric Co. (Inc.), New York, N. Y.	
Tacoma Plumbing Supply Co., Tacoma Wash.	Western Supply Co., Lincoln, Nebr.	
Tennessee Mill & Mine Supply Co., Knoxville, Tenn.	Wheeling Sanitary Manufacturing Co., Wheeling, W. Va.	
Thompson, Roy E., Tacoma, Wash.	White & Shauger (Inc.), Paterson, N. J.	
Thorn & Son, A. Boyd, Clearfield, Pa.	Whitney & Ford Co., Chicago, Ill.	
Tomlinson Co. (Inc.), Philadelphia, Pa.	Wigman Co., Sioux City, Iowa.	
Trenton Potteries Co., Trenton, N. J.	Williams Hardware Co., Clarksburg, W. Va.	
Trimble & Lutz Supply Co., Wheeling, W. Va.	Wisconsin River Supply Co., Wausau, Wis.	
Turner Supply Co., East St. Louis, Ill.	Woodbridge Ceramic Corporation, Woodbridge, N. J.	
United States Supply Co., Kansas City, Mo.	Woonsocket Supply Co. (Inc.), Woon- socket, R. I.	
Universal Supply Co., Newark, Ohio.	Worthington Co., George, Cleveland, Ohio.	
Universal Supply Co., Parkersburg, W. Va.	Yakima Plumbing Supply Co., Yakima, Wash.	
Utica Plumbing Supply Co. (Inc.), Utica, N. Y.	<b>GOVERNMENT</b>	
Valley Plumbing & Heating Supply Co., Menasha, Wis.	Department of the Interior, Washing- ton, D. C.	
Van Camp Hardware & Iron Co., Indianapolis, Ind.	Government of the District of Colum- bia, Washington, D. C.	
Volk Plumbing & Heating Co., Tacoma, Wash.	United States Department of Labor, Washington, D. C.	
Warren Balderston Co., Trenton, N. J.	United States Shipping Board Mer- chant Fleet Corporation, Washing- ton, D. C.	
Watrous Co., Chicago, Ill.		
Weekes & Son Co., John, Watertown, N. Y.		
Welker Supply Co., Cleveland, Ohio.		
Wellington Kincaid Co., Bridgeport, Conn.		



## STAPLE PORCELAIN (ALL-CLAY) PLUMBING FIXTURES

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### COMMERCIAL STANDARD CS4-29

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On June 12, 1928, a joint committee of representative manufacturers, distributors, and users adopted a commercial standard for staple porcelain (all-clay) plumbing fixtures. The industry has since accepted and approved for promulgation by the Department of Commerce the standard as shown herein.

This recommendation is effective from July 1, 1929, for new production; January 1, 1930, for clearance of manufacturers' stock; and is subject to regular annual revision by a similar conference.

Promulgation recommended.

R. M. HUDSON,  
*Assistant Director Commercial Standards.*

Promulgated.

GEORGE K. BURGESS,  
*Director Bureau of Standards.*

APPROVED October 23, 1928.

WILLIAM F. WHITING,  
*Secretary of Commerce.*

(1)

## GENERAL

The nomenclature, definitions, grading rules, types, sizes, dimensions, and general practices given herein are recommended as standard by the manufacturers, distributors, and users of porcelain (all-clay) plumbing fixtures.

Types and sizes of urinals, sinks, laundry trays, lavatories, receptors, and baths not specifically mentioned are considered as special.

## GRADING RULES

Noteworthy advances recently have been made in the structure, glaze, and appearance of porcelain (all-clay) plumbing fixtures as a result of continual effort to attain perfection. In common with all other industries, certain tolerances or unimportant variations occurring in the finished product are recognized, which here take the form of unavoidable minor blemishes, invisible to the untrained eye, and which result from traces of certain impurities, which are sometimes segregated, in the refined clays and earths of which the ware is made. Within duly prescribed limitations such minor blemishes have no effect on the utility or value of the fixture. However, they are employed as the simplest commercial basis for grading the ware.

All of the described ware which grades below "regular selection" on any one blemish is classified as "culls."

## NOMENCLATURE AND DEFINITIONS

**Break.** A damage resembling a dunt, but resulting from accident or handling after shipment from factory.

**Chipping.** Unglazed parts along ground edges extending more than  $\frac{1}{4}$  (0.25) inch from edge.

**Craze.** Fine cracks in the glaze.

**Culls.** Serviceable ware which grades below "regular selection."

**Discoloration.** A single colored spot over  $\frac{1}{4}$  (0.25) inch in diameter or a sufficient number of "spots" to give the effect of a change in color. Faint green spots are not classified as discoloration.

**Dull or eggshell finish.** Dead or flat finish. Undeveloped glaze.

Slightly matted. A semiglazed finish with appearance of numerous very fine pinholes. Not glossy.

**Dunt.** A hairline fracture extending through the body caused by strains set up in the process of manufacture.

**Finish.** Texture and condition of surface other than color.

**Fire check.** Fine shallow crack in the body, not covered with glaze.

No pieces with open fire checks shall be marketed. (When sufficiently covered with glaze as to be easily cleaned, it is not detrimental.)

**Fire check stopped.** Fire check not over  $\frac{1}{8}$  (0.125) inch wide which has been filled with cement or other satisfactory repair material forming a clean and complete repair.

**Green spot.** Dark centered green spots are classified as discoloration.

**Kiln support marks.** Large unglazed spots resulting from blocks necessary to support the ware while firing and allowable on the back or one end of fixtures. They are regularly covered with white enamel paint.

**Pinhole.** Unglazed portion of body, or small hole under  $\frac{1}{16}$  (0.063) inch in diameter.

**Polishing mark.** A spot where some minor blemish has been ground off and surface polished and with an area not greater than that of a  $\frac{1}{8}$  (0.375) inch circle.

**Pottery square.** A square 2 inches on a side. For grading purposes it may be a 2-inch square hole cut in a small sheet of any flexible material, such as rubber or paper, for convenience in sliding over irregular surfaces to determine segregations.

**Projection.** A raised portion of the surface  $\frac{1}{32}$  (0.031) inch to  $\frac{1}{4}$  (0.25) inch in maximum dimension.

**Large projection.** A raised uncolored portion of the surface greater than  $\frac{1}{4}$  (0.25) inch in maximum dimension.

**Regular selection.** First-class ware in conformity with the limitations of the grading rules.

**Roughing-in measurement.** Dimension from finished wall or floor to center of waste or supply opening.

**Segregation.** More than 4 spots, 4 projections, or 8 pinholes in any possible "pottery square."

**Spot.** Colored portion of the surface  $\frac{1}{32}$  (0.031) inch and less than  $\frac{1}{8}$  (0.125) inch in maximum dimension.

**Large spot.** A colored portion  $\frac{1}{8}$  (0.125) inch to  $\frac{1}{4}$  (0.25) inch in maximum dimension.

**Streak.** A slight defect in the finish, giving an appearance similar to paintbrush marks.

**Visible surface.** The surface other than wet surface, readily visible after installation of the fixture, by an observer in normal standing position.

**Warpage.** The maximum deviation from a straightedge laid as nearly parallel to the edge of the piece as possible.

**Wavy finish.** A defect in the finish having the appearance of numerous runs in the glaze; irregular or mottled.

**Wet surface.** The surface which may be wet during the normal use or operation of the fixture.

### METHOD OF GRADING STALL URINALS

Examine closely the wet surface, which includes the top of the extended lip, for exposed body, fire checks, pinholes, projections, and spots. Fire checks behind the splash rim or lip are considered to be on unseen surfaces, except those near the bottom of the urinal. Examine remainder of piece for dunts or other defects.

Since most stall urinals are set up in batteries spaced only 6 inches apart or with joints filled and covered, defects occurring on the sides are not considered to be as serious as on other parts of the fixtures.

Stall urinals are graded according to the maximum blemishes listed in Table 1.

**NOTE.**—It is not intended that the inspector shall measure or count any blemishes except in case of doubt, since with practice dimensional limits and numbers can readily be gaged by eye.

TABLE 1.—*Stall urinals*

Location	Blemish or defect	Regular selection
Entire glazed surface.	{ Discolorations..... Projections or large spots..... Warpage..... Wavy finish.....	Not more than 3. Not more than 5. Not warped more than $\frac{1}{2}$ inch at sides or front. Not over 10 square inches.
Wet surface.....	{ Spots and pinholes..... Stopped fire check.....	A total of not more than 15; no segregation. Not more than 1; not over $\frac{1}{2}$ inch.
Visible surface other than sides.	{ Spots and pinholes..... Stopped fire check.....	A total of not more than 15; no segregation. Not more than 1; not over 1 inch long.
Sides.....	{ do..... Other permissible blemishes.....	{ Not over 2 inches long; not more than 2. Not more than twice the number permissible on the "visible surface other than sides."

### METHOD OF GRADING SINKS, ROLL RIM LAUNDRY TRAYS, COMBINATION SINK AND LAUNDRY TRAYS, AND SLOP SINKS

Examine closely the wet surface, which includes the back and top of rim, for exposed body, fire checks, pinholes, projections, and spots. Examination should be made with the eyes of observer about 2 feet from the surface observed. Examine the remainder of the piece for dunts or other defects.

Sinks, roll rim laundry trays, combination sink and laundry trays, and slop sinks are graded according to the maximum blemishes listed in Table 2.

Legs are graded on the same basis as the fixture.

TABLE 2.—*Sinks, roll-rim laundry trays, combination sink and laundry trays, and slop sinks*

Location	Blemish or defect	Regular selection
Entire glazed surface.	{ Discolorations..... Projections or large spots..... Warpage..... Wavy finish.....	Not more than 3. Not more than 5. Not warped inward more than $\frac{1}{2}$ inch. Not over 10 square inches.
Wet surface-----	{ Spots and pinholes..... Stopped fire check.....	A total of not more than 20; no segregation. Not over $\frac{1}{2}$ inch long; not more than 2.
Visible surface-----	{ Spots and pinholes..... Stopped fire check.....	A total of not more than 20; no segregation. Not over 2 inches long; not more than 1.

### METHOD OF GRADING BATHS AND SHOWER RECEPTORS

Examine closely the wet surface, which includes top of rim, for exposed body, fire checks, discoloration, pinholes, projections and spots. Examination should be made with the eyes of observer about 2 feet from the surface observed. Examine the remainder of the piece for dunts or other defects.

Baths and shower receptors are graded according to the maximum blemishes listed in Table 3.

TABLE 3.—*Bath and shower receptors*

Location	Blemish or defect	Regular selection
Entire glazed surface.	{ Discoloration..... Projections or large spots..... Warpage..... Wavy finish.....	Not more than 3; not over 1 inch maximum dimension. Not more than 5. Not warped more than 1 inch. Not over 10 square inches.
Wet surface-----	{ Spots and pinholes..... Stopped fire check.....	A total of not more than 15; no segregation. Not over $\frac{1}{2}$ inch long.
Visible surface— (1 side and 1 end).	{ Spots and pinholes..... Stopped fire check.....	A total of not more than 15, no segregation. Not more than two; not over 4 inches long.

### METHOD OF GRADING LAVATORIES

Lavatories should be examined with the eyes of the observer about 2 feet from the surface observed and are graded according to the maximum blemishes listed in Table 4.

Blemishes or defects on other than visible surfaces are not counted.

The top of slab, front apron, inside of bowl, and face of back of lavatories with back are most important. Sides should not be subjected to the same rigid inspection.

Warpage tests are made at factory by use of horizontal plane, this being a level table upon which lavatory is allowed to rest, face down, and tested with thickness gauges placed between lavatory and table.

Pedestals and legs are graded on the same basis as the lavatory. Pedestals and legs are not to be warped out of perpendicular line more than  $\frac{1}{2}$  inch.

TABLE 4.—*Lavatories*

Location	Blemish or defect	Regular selection
Entire glazed surface.	Discolorations..... Projections or large spots..... Warpage.....	Not more than 1. Not more than 3. On 24 by 20 inch lavatories and larger, warpage of slab out of horizontal plane not to exceed $\frac{3}{8}$ inch.
Service space, top of slab, inside of bowl, and front of apron. Face of integral back and side.	Polishing mark..... Spots and pinholes..... Stopped fire check..... Spots and pinholes.....	Not more than 2. A total of not more than 8; no segregation. None allowed. Not more than 5 on either side or back; no segregation; a total of not more than 15.

#### METHOD OF GRADING FLAT-RIM LAUNDRY TRAYS

Examine closely the wet surface, which includes only the inside of tray, for exposed body, fire checks, pinholes, projections, and spots. Examination should be made with the eyes of the observer about 2 feet from the surface observed. Examine the remainder of the piece for dunts or other defects.

Flat-rim laundry trays are graded according to the maximum blemishes listed in Table 5.

Legs are graded on the same basis as the fixture.

TABLE 5.—*Flat-rim laundry trays*  
(Top of rims are unglazed)

Location	Blemish or defect	Regular selection
Entire glazed surface.	Discolorations..... Projections or large spots..... Warpage..... Wavy finish.....	Not more than 3 per compartment. Not more than 5 per compartment. Not warped more than $\frac{3}{4}$ inch. Not over 10 square inches.
Wet surface.....	Spots and pinholes..... Stopped fire check.....	A total of not more than 20; no segregation. Not more than 2; not over 1 inch long.
Visible surface.....	Spots and pinholes..... Stopped fire check.....	A total of not more than 20; no segregation. Not more than 2; not over 2 inches long.

#### MARKING AND LABELING

Porcelain (all-clay) plumbing fixtures shall bear the trade-mark or name of the actual manufacturer and the words "Made in U. S. A." applied in such manner as to be permanent.

It is recommended that no name, brand, or label other than that of the actual manufacturer be used on the ware.

"Regular selection" labels shall be used only on such ware as conforms to the requirements for "regular selection" as set forth in the grading rules. No label shall be used on ware which grades lower than "regular selection." Labels shall be applied only at the factory.

The following wording shall be used on labels for "regular selection" ware:

**PORCELAIN (ALL-CLAY) REGULAR SELECTION**

We certify that this porcelain (all-clay) plumbing fixture conforms to regular selection in accordance with grading rules incorporated in Commercial Standard CS4-29 adopted by the industry in co-operation with the Bureau of Standards of the Department of Commerce.

**CULLS**

Manufacturers shall mark all culls with two small dots cut through the glaze and filled with red ink or enamel at the locations specified below:

Fixture	Location
Urinals-----	On the top behind the inlet.
Lavatories-----	Underneath on the right side of bowl.
Sinks and trays-----	On front just above the right leg.
Receptors-----	On front at the right side.

All crates containing "culls" shall be marked with two splashes of red on one end of the crate so as to be visible without tearing down stacks.

**DIMENSIONAL STANDARDS**

The clearance between fixture and wall for all fixtures set away from wall shall be 2 inches for regular installation.

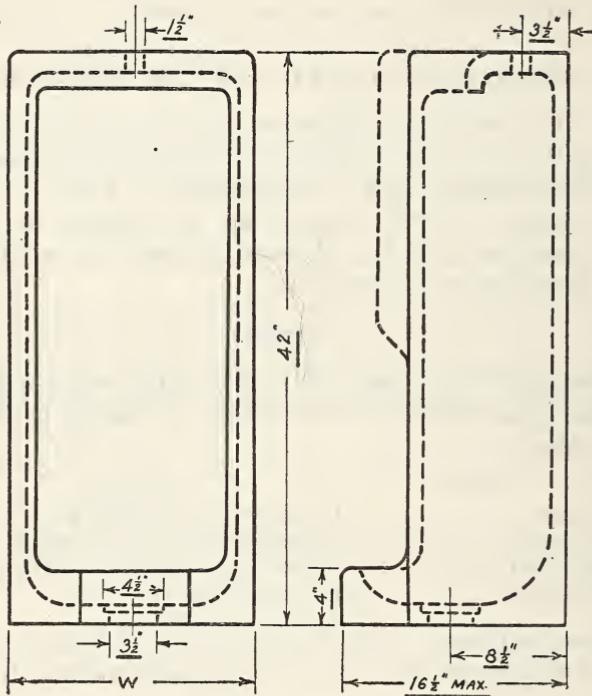
Where not otherwise specified, a variation of 5 per cent will be permitted from all dimensions indicated herein.

Underlined dimensions are identical for all sizes and types of similar items.

Illustrations indicate types and sizes but do not represent standard designs.

## STANDARD TYPES AND SIZES

The following types, items, sizes, and dimensions are recommended as standard for the industry. Other types, items, sizes, and dimensions are considered special.



TYPE	W, inches
STALL URINAL, - WINGLESS.	18
" " "	24
" " WINGED.	18
" " "	24

FIGURE 1.—Winged and wingless stall urinals

#### STALL URINALS

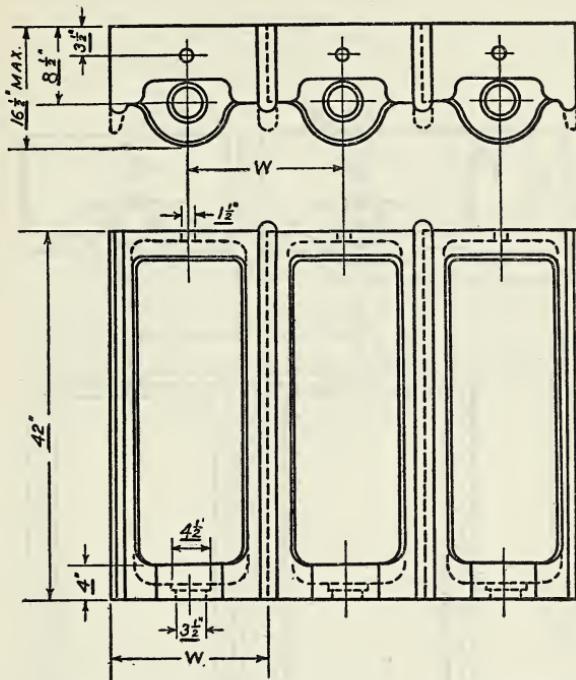
When stall urinals are set in mortar, plaster, cement, or concrete at least  $\frac{1}{2}$  inch should be allowed beneath for "rocking in" with dry sand. This will properly allow for the natural contraction and expansion of walls, partitions, concrete, etc.

Stall urinals ground on the sides to butt together for battery installation without partitions shall be eliminated for the reason that the type of installation is impracticable and unsanitary.

Eliminate 27-inch interlocking stall urinals.

## RESULTS

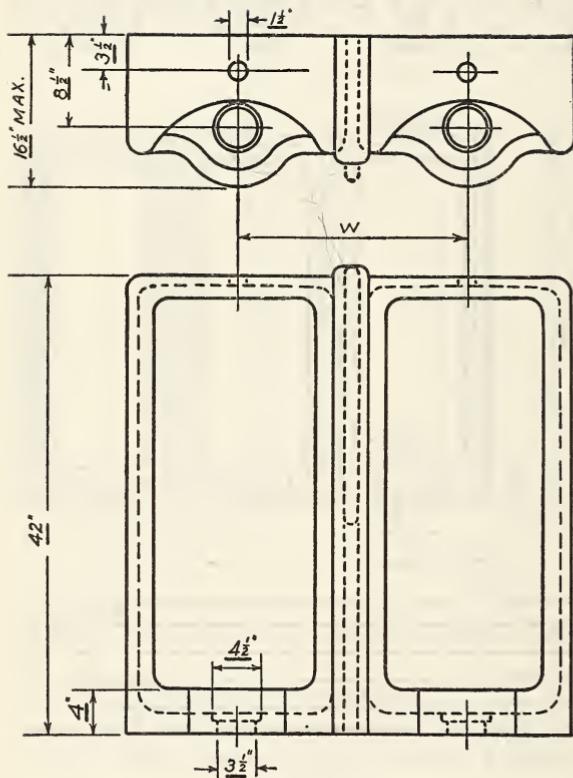
The foregoing recommendations contemplate a reduction of variety considered as staple as indicated by the following table:



TYPE	W - inches
STALL URINAL, WINGLESS - R, L, and CENTER.	18
" " " "	24
" " " WINGED, - R, L, and CENTER.	18
" " " "	24

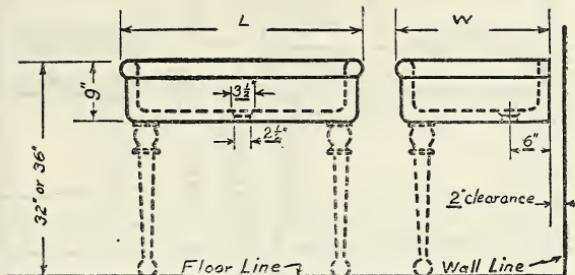
FIGURE 2.—Integral interlocking stall urinals, winged and wingless

	Total variety	Variety retained as staple	Reduction in variety	Per cent
Stall urinals.....	71	28		61
Sinks.....	163	15		91
Laundry trays and combination sink and tray.....	103	14		86
Lavatories.....	120	8		93
Baths and receptors.....	165	22		87
Total.....	622	87		86
Average.....				



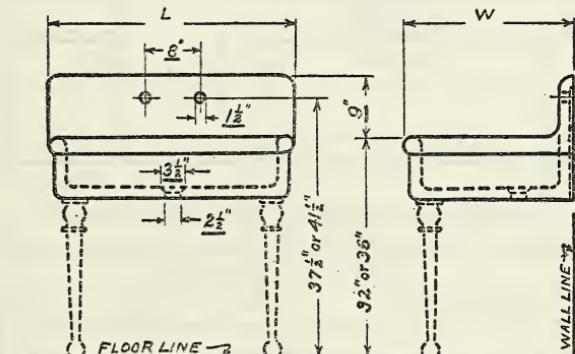
TYPE	W - inches
STALL URINAL, WINGLESS, - R, L, and CENTER.	21
" " " "	27
" " WINGED, - R, L, and CENTER.	21
" " " "	27

FIGURE 3.—Stall urinals in battery with partition, winged and wingless



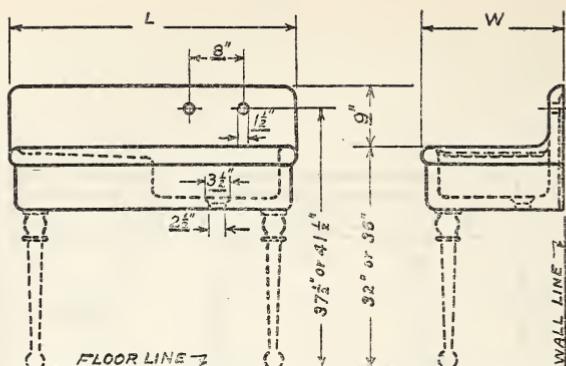
TYPE	L-inches	W-inches
KITCHEN SINK - ALL ROLL RIM.	36	23
" " "	42	24
" " "	48	24

FIGURE 4.—Kitchen sinks, all roll rim, with or without two legs



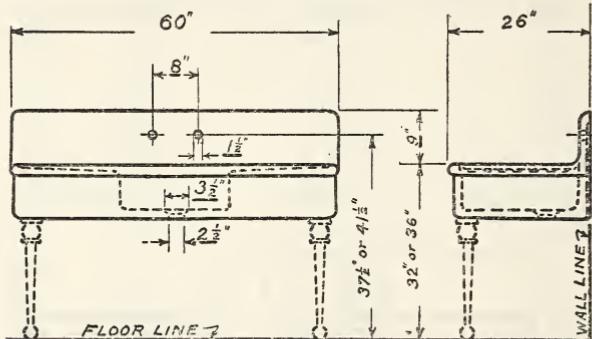
TYPE	L-inches	W-inches
KITCHEN SINK - WITH BACK.	24	20
" " "	30	22
" " "	36	24
" " "	42	24

FIGURE 5.—Kitchen sinks with back, with or without two legs



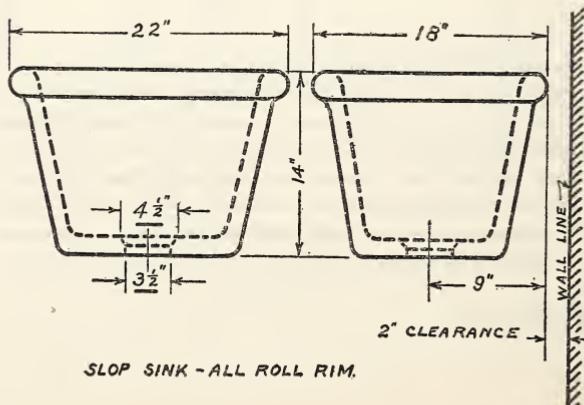
TYPE	L-inches	W-inches
KITCHEN SINK, - INTEGRAL BACK AND DRAINBOARD, R.+L.	42	21
	52	24

FIGURE 6.—Kitchen sinks, integral back and drainboard, with or without two legs (R & L)



#### KITCHEN SINK - BACK AND DOUBLE DRAIN SHELF.

FIGURE 7.—Kitchen sinks, back and double drain shelf, with or without two legs



SLOP SINK - ALL ROLL RIM.

FIGURE 8.—Slop sinks, all roll rim

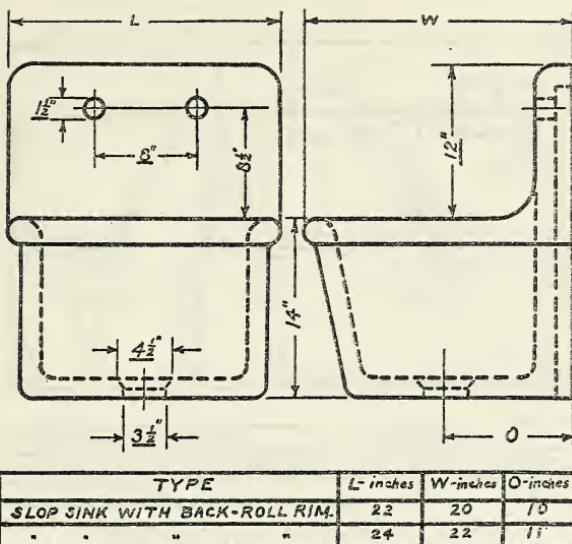
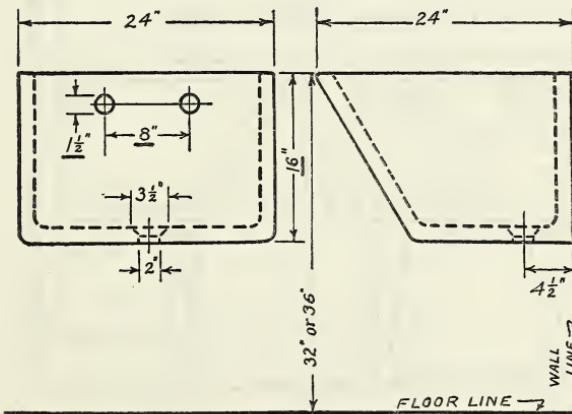
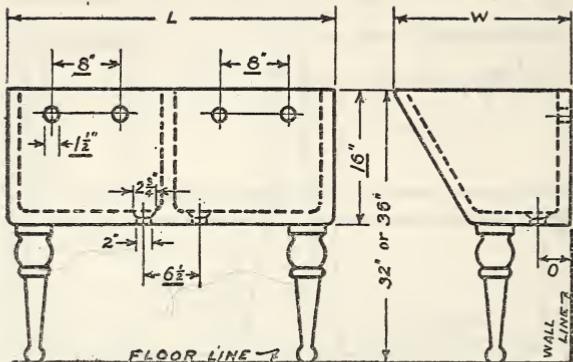


FIGURE 9.—Slop sinks with back, roll rim



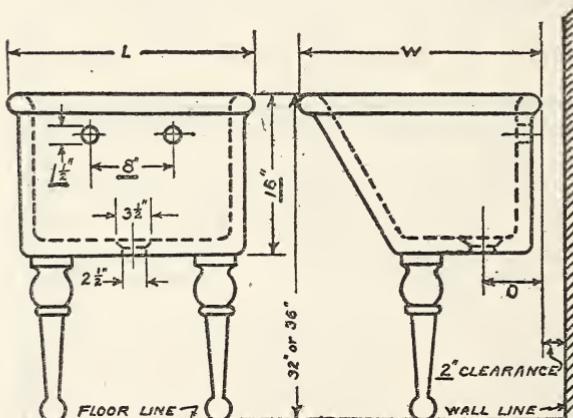
LAUNDRY TRAY - FLAT RIM.

FIGURE 10.—Laundry trays, flat rim



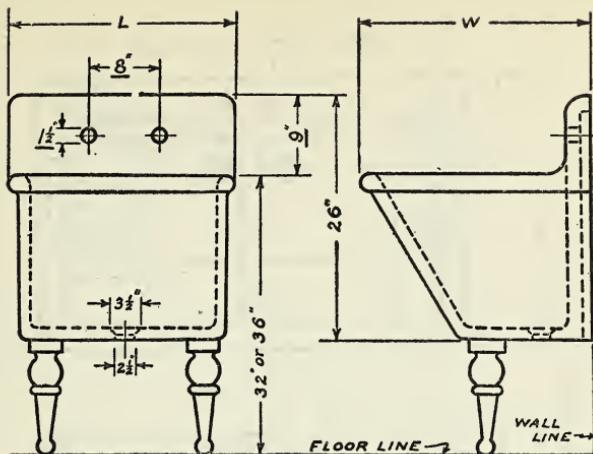
TYPE	L-inches	W-inches	O-inches
LAUNDRY TRAY-DOUBLE-FLAT RIM	40	22	4
" " " "	46	24	4

FIGURE 11.—*Double laundry trays, flat rim*



TYPE	L-inches	W-inches	O-inches
LAUNDRY TRAY - ALL ROLL RIM.	24	24	6
	30	26	6

FIGURE 12.—*Laundry trays, all roll rim*



TYPE	L-inches	W-inches
LAUNDRY TRAY - WITH BACK.	26	26
"	30	26

FIGURE 13.—Laundry trays with back

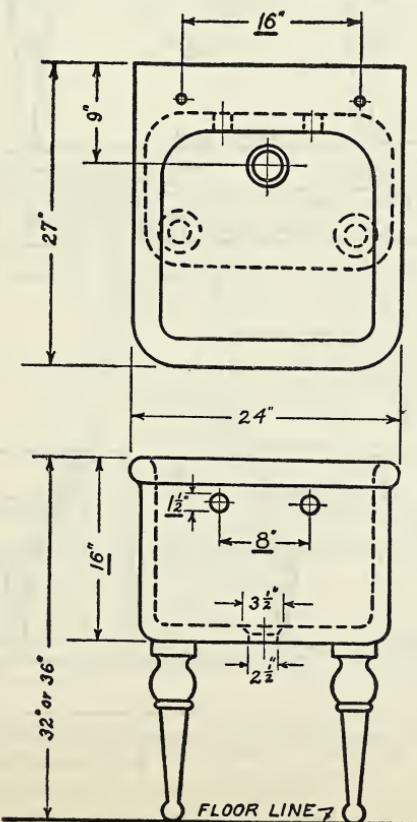
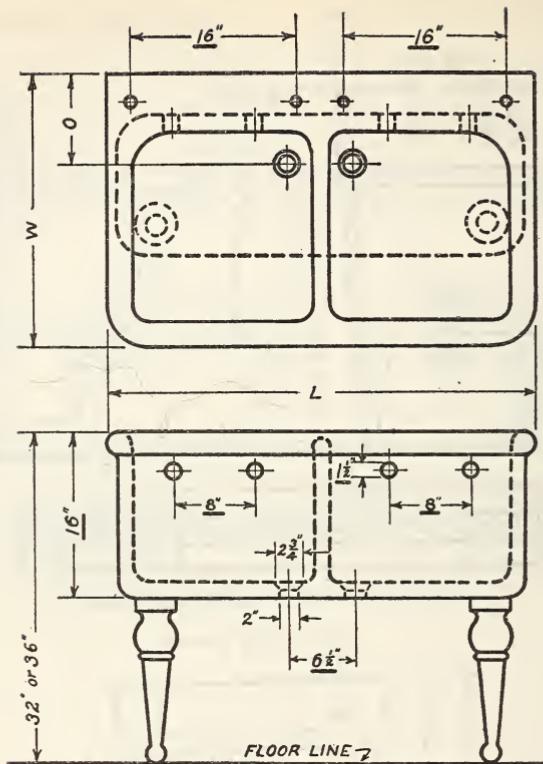
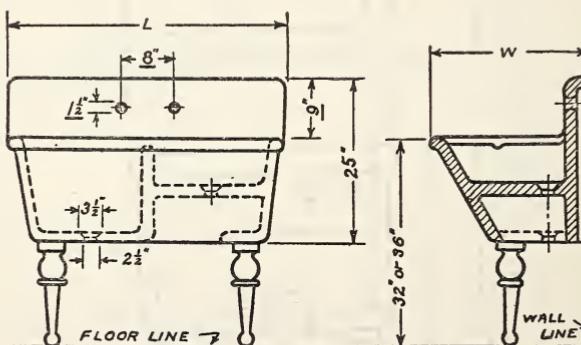


FIGURE 14.—Laundry trays with extended ledge



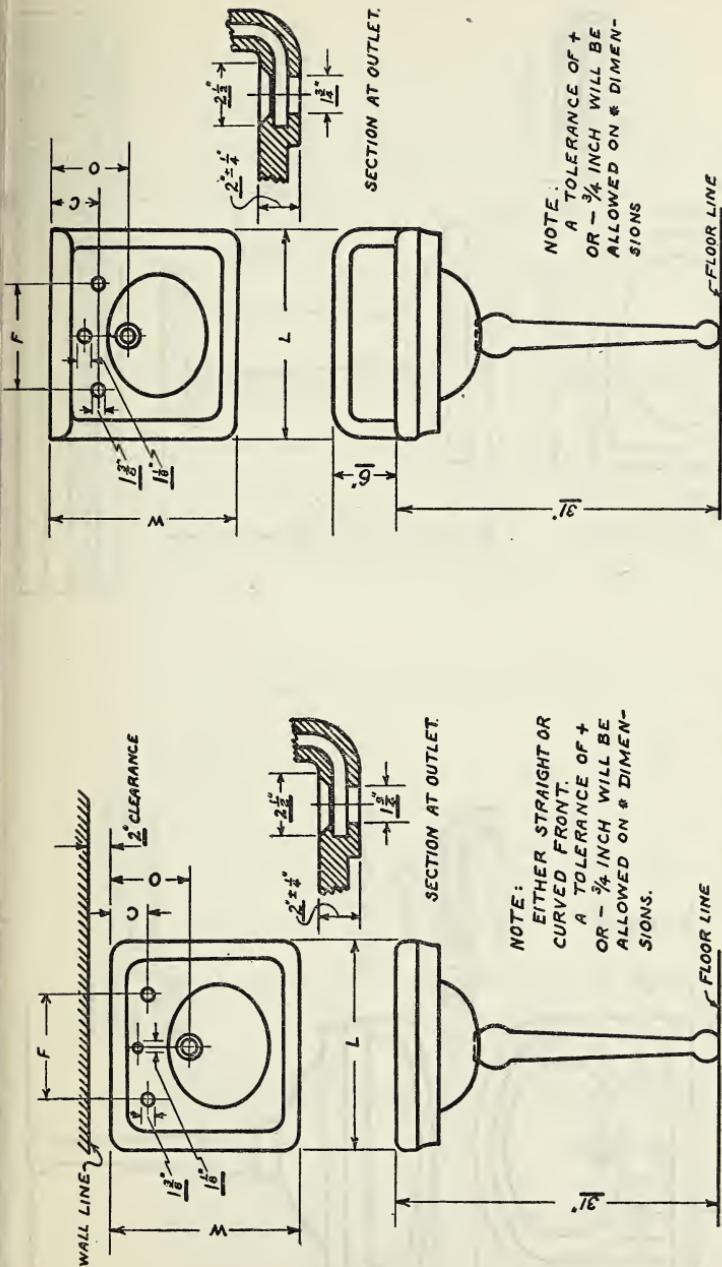
TYPE	L-inches	W-inches	O-inches
LAUNDRY TRAY - DOUBLE < WITH EXTENDED LEDGE.	42	27	9
	46	27	0

FIGURE 15.—Double laundry trays with extended ledge



TYPE	L-inches	W-inches
SINK AND TRAY - COMBINATION - WITH BACK - R and L.	42	24
	50	24

FIGURE 16.—Combination sink and tray with back



TYPE	L	W	F	O*	C*
RECTANGULAR LAVATORY WITH LEG.	20	18	10	7 1/2	3 1/2
"	"	24	20	12	7 1/2

FIGURE 17.—Rectangular lavatories with leg

TYPE (Dimensions in inches)	L	W	F	O*	C*
RECTANGULAR LAVATORY WITH LEG.	20	18	10	7 1/2	3 1/2
"	"	24	20	12	7 1/2

FIGURE 18.—Rectangular lavatories with back and leg

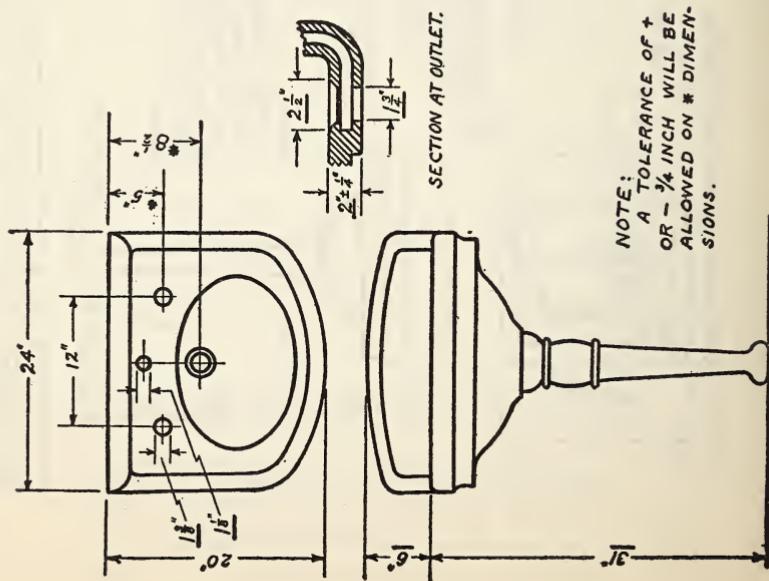
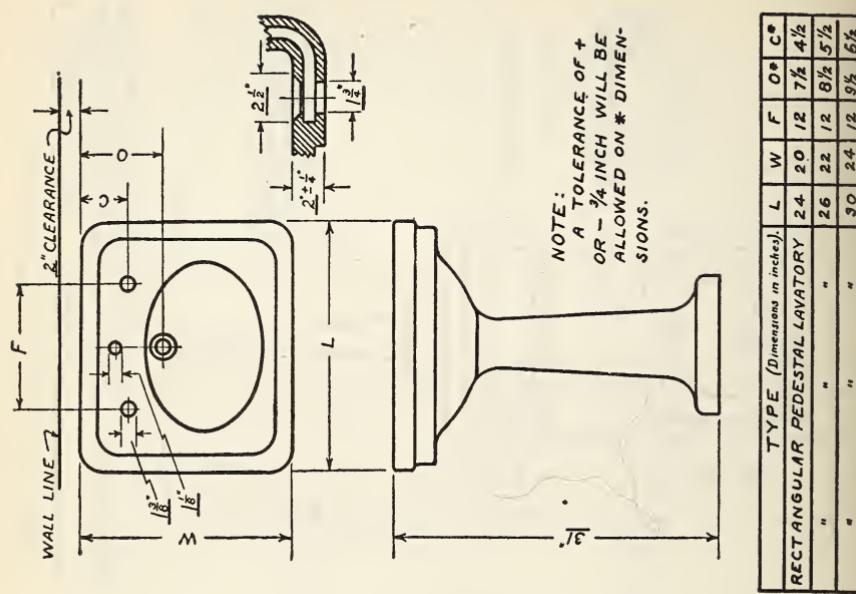


FIGURE 19.—Elliptical front lavatories with back and leg

FIGURE 20.—Rectangular pedestal lavatories

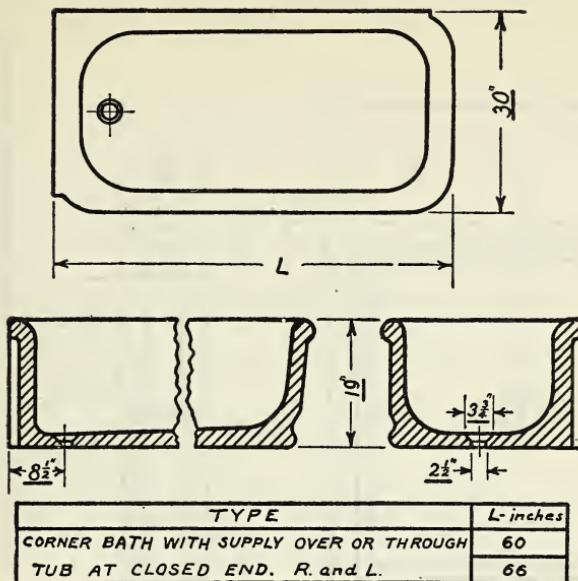


FIGURE 21.—Corner baths with supply over or through tub at closed end

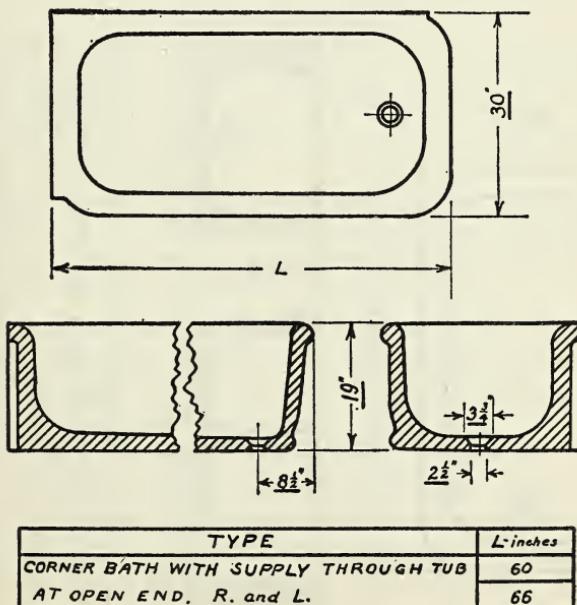


FIGURE 22.—Corner baths with supply through tub at open end

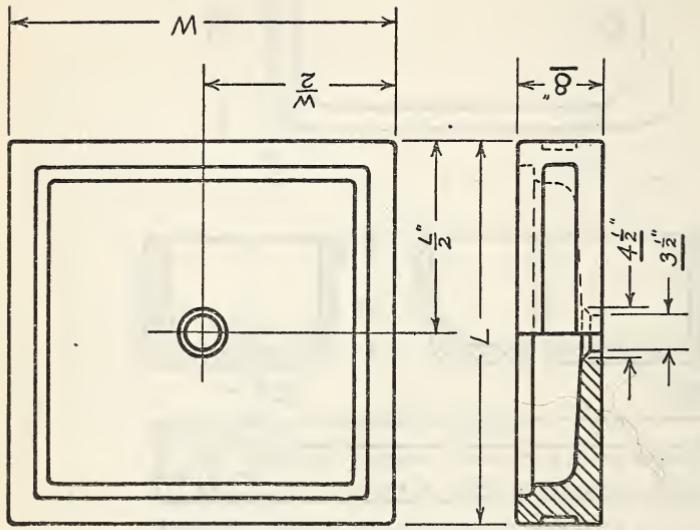


FIGURE 24.—Universal type shower receptors

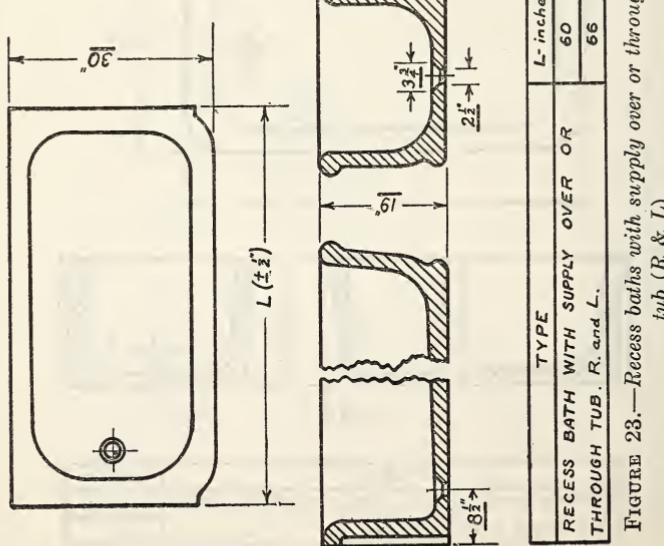


FIGURE 23.—Recess baths with supply over or through tub (R &amp; L)

## GENERAL CONFERENCE

[Held at Washington, D. C.; June 12, 1928]

Pursuant to request from the Advisory Committee on Porcelain (All-Clay) Plumbing Fixtures, a general conference of representative interests was held June 12, 1928, at the Department of Commerce, Washington, D. C.

The following individuals were present:

BRADY, J. F., Plumbers Trade Journal of New York, 239 West Thirtieth Street  
New York, N. Y.

DRAKE, GEORGE H., National Association of Master Plumbers, 218 Lexington Avenue., Buffalo, N. Y.

EDWARDS, MISS ALICE L., American Home Economics Association, 617 Mills Building, Washington, D. C.

FOOS, I. D., Ceramic Industry, Washington, D. C.

FURLONG, PETER J., Office of Supervising Architect, United States Treasury Department, Washington, D. C.

HANSEN, ABEL, Fords Porcelain Works, Perth Amboy, N. J.

HARVEY, CHARLES D., Department of Agriculture, Washington, D. C.

HOFFMAN, GEORGE E., The Trenton Potteries Co., Trenton, N. J.

KERN, LE ROY E., American Institute of Architects, 19 West Forty-fourth Street, New York, N. Y.

KREGER, JOHN M., Woodbridge Ceramic Corporation, Woodbridge, N. J.

MAGINNIS, E. A., Standard Sanitary Manufacturing Co., Washington, D. C.

MITCHELL, A. R., Beaver Refrigerator & Potteries Co., New Brighton, Pa.

PARR, J. R., General Ceramics Co., 225 Broadway, New York, N. Y.

PROBST, LOUIS, J. L. Mott Co. (Inc.), Trenton, N. J.

RAMAGE, JAMES E., Domestic Engineering, 1900 Prairie Avenue, Chicago, Ill.

SAWYER, D. H., Associated General Contractors of America, Washington, D. C.

SNYDER, C. B., St. Elizabeths Hospital, Washington, D. C.

STACKHOUSE, CLIFTON C., The Panama Canal, Washington, D. C.

WEISBROD, E. HARRY, Department of Interior, Washington, D. C.

DEPARTMENT OF COMMERCE:

BLETZ, M. H., standard section, Bureau of Foreign and Domestic Commerce

BRAITHWAITE, W. E., division of simplified practice, Bureau of Standards.

FAIRCHILD, I. J., commercial standards unit, Bureau of Standards.

WRAY, G. W., Bureau of Standards, Washington, D. C.

The proposed commercial standard recommended by the Advisory Committee on Porcelain (All-Clay) Plumbing Fixtures under date of March 7, 1928, was considered in detail by the conference with the result that several changes were agreed upon.

Mr. Kern stated that the architects would prefer to have the grading rules written from a positive point of view rather than the negative listing of major defects which may be encountered, as this tends to create an undesirable impression on the reader. He indicated that such a method is impracticable at this time but hoped that a study might be made to that end. By unanimous consent the conference referred this suggestion to the standing committee for future consideration.

Miss Edwards stated that the American Home Economics Association has studied the matter of optimum heights of working surfaces and suggested that the proper height of bottom of laundry trays be given careful consideration. Although no definite dimensions can be recommended at this time, this subject was also referred to the standing committee for future consideration.

Upon motion by Mr. Hansen, seconded by Mr. Parr, it was voted to adopt the proposed commercial standard as revised by the conference.

The conference set July 1, 1929, as the effective date for new production, and January 1, 1930, as the final date for clearance of manufacturers' stock.

### STANDING COMMITTEE

The following standing committee was appointed to consider annually any comment or suggestions as to changes in the commercial standard in order that it may be kept continually in accord with the desires of the industry and advance in the art.

GEORGE E. HOFFMAN, chairman, Trenton Potteries Co.  
 LE ROY E. KERN, American Institute of Architects.  
 GEORGE H. DRAKE, National Association of Master Plumbers.  
 R. T. ROCK, National Association of Master Plumbers.  
 ABEL HANSEN, Fords Porcelain Works.  
 W. J. SPILLANE, James B. Clow & Sons.  
 BENJAMIN CADBURY, Hajoca Corporation.  
 GEORGE KUMPH, Dimock & Fink Co.  
 C. W. FELL, W. A. Case & Son Manufacturing Co.  
 I. J. FAIRCHILD, Bureau of Standards.

The conference voted to request application of the "certification plan."

Following presentation of available services of the Bureau of Foreign and Domestic Commerce by Mr. Bletz relative to translation and publication of standards in foreign languages and promotion through our foreign trade representatives, it was decided that the matter of such translations and publications is of interest only to producers, and that it should be referred to the Advisory Committee on Porcelain (All-Clay) Plumbing Fixtures for final decision. Mr. Bletz stated that total exports of vitreous, porcelain, and enameled plumbing fixtures for 1927 were approximately  $2\frac{1}{2}$  million dollars, of which 80 to 85 per cent went to Latin-American and Spanish-speaking countries, 5 per cent to Canada, and the remainder scattered throughout the rest of the world. He stated that it is impossible to determine from available data just what proportion of the above reports represents a particular material, but it was estimated that about one-half of the total is made up of vitreous and porcelain ware.

## COMMERCIAL STANDARDS PROCEDURE

Industry has long sensed the need for a wider application and use of specifications developed and approved by nationally recognized organizations. To assist these bodies and the producers and consumers in securing this result and as a natural outgrowth of the movement toward elimination of waste through simplified practice, the Bureau of Standards has set up a procedure under which specifications, properly indorsed, may be printed as official publications of the Department of Commerce and promulgated as "commercial standards." This service parallels that of the division of simplified practice in many respects and is available only upon request.

Broadly speaking, the aim is to continue the same character of cooperative service in this field that is being rendered in simplification. The commercial standards unit is not designed to act as a standardizing body, nor will it engage in the preparation of specifications. Its service is mainly promotional in character, since its chief mission is to get behind a standard or a specification which an industry or its related groups may want to promulgate on a nationwide basis; to determine its eligibility for promulgation; to publish and broadcast it in the event the prerequisites of procedure have been met, including a satisfactory majority acceptance; to facilitate the application of the certification plan for the assurance and convenience of the small purchaser; to provide means for periodical audits of adherence; and to cooperate with the Bureau of Foreign and Domestic Commerce in determining the desire of industry relative to translation and promulgation of such specifications as a basis for foreign commerce.

In general, it may be said that a simplification covers types, sizes, and varieties of a commodity which are retained by industry on the basis of demand, whereas a commercial standard establishes definite requirements as to grade, quality, or dimensional tolerances in addition to any limitation of variety desired and accepted by the industry.

## ORGANIZATION AND DUTIES OF STANDING COMMITTEE

At the close of its session each general conference appoints a permanent standing committee, composed of not more than three representatives from each phase of the industry; for example, producers, distributors, and consumers.

The proper functioning of the committee requires that its members be able to attend in person meetings held at some acceptable central place. The committee members must also be prepared to devote the necessary time and to accept such assignments and responsibilities as may be found requisite to the success of the program.

Because the Department of Commerce in no case assumes the prerogative of taking final action in connection with a commercial

standard, it is essential that there be some avenue through which the industry can be consulted promptly and can, in turn, make known its wishes. This function is best performed by a representative standing committee. For this reason the chairman, in accepting his appointment, places his services and those of his committee at the disposal of the Bureau of Standards for the prompt and careful consideration of all questions which may arise when the program is put into actual use.

A committee that quickly and accurately reflects the wishes of the majority of its industry and, through its chairman, promptly disposes of matters referred to it is a practical insurance against any serious difficulty in the adoption of a commercial standard.

The standing committee must recognize that the Department of Commerce has no "police powers" to compel the acceptors to adhere strictly to the letter of the recommendation. Unanimous adoption by the general conference indicates a recognition of the benefits inherent in standardization. If this fact is properly emphasized, the acceptors should be equally willing to follow the program in all cases where it is applicable.

While the recommendation is in effect, the standing committee is to receive all information showing departures, and to apply such corrective measures as appear to be in the best interest of all concerned.

### YOUR COOPERATION

As a producer, distributor, or consumer of some of the commodities which have already been simplified or standardized you are in a position to add impetus to this method of eliminating waste. The first step in that direction is to record your intention to adhere, as closely as circumstances will allow, to one or more of the existing recommendations.

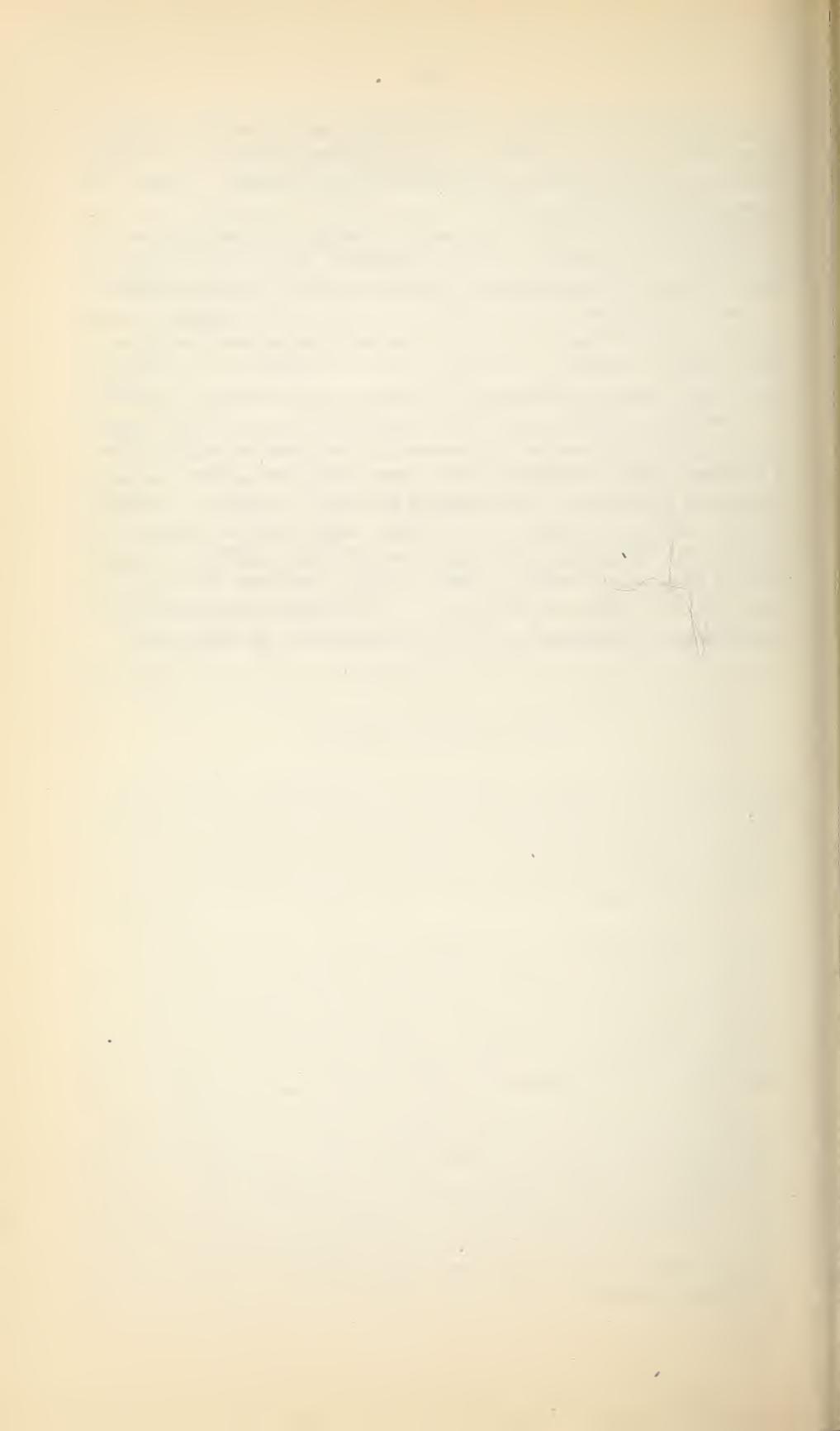
You will, of course, want to examine the schedules before signing. The commercial standards group will, therefore, furnish a copy of any recommendation which you wish to consider with a view to its adoption. Publications no longer available in this manner can be purchased, for a few cents each, from the Superintendent of Documents, Government Printing Office, Washington, D. C. (We will furnish detailed price list on request.)

When you have reached a decision, fill out the acceptance form on page 25, check the proper items on page 26, detach the sheet, and mail it to the commercial standards group, Bureau of Standards, Washington, D. C. In making your selection remember that commercial standards apply not only to the things you sell but to the things you buy. On the support accorded by the consumer depends, in a large measure, the success of these waste-elimination programs.

The receipt of your signed acceptance will permit the listing of your organization in new editions of the recommendations you have checked. Any proposed revisions will be submitted to you for approval prior to publication.

This support is entirely voluntary and applies to stock items. It is not meant to interfere with the purchase or sale of such special sizes and types as are sometimes required to meet unusual conditions.

Trade associations and individual companies often distribute large numbers of the printed booklets for the information and guidance of their business contacts. In such cases it is possible to extend the scope and degree of adherence by urging each recipient to send in an acceptance. Bear in mind that the practical value of any simplification or standardization is measured by the observance it receives. A number of the simplified practice recommendations have already secured an adherence of more than 90 per cent, by volume, of annual output. If each producer, distributor, and consumer will do his part toward discarding nonessentials and specify simplified or standardized lines when buying, adherence will approach 100 per cent. Obviously the higher the adherence to each specific simplification or standardization the greater will be the benefits to all concerned.



NOTE.—The information requested in footnotes 1 and 2 is essential to the proper listing of your organization in future editions of the printed bulletins.

### ACCEPTANCE OF COMMERCIAL STANDARD

Date \_\_\_\_\_

The DEPARTMENT OF COMMERCE,

*Washington, D. C.*

SIRS: We, the undersigned, hereby accept the commercial standards checked on the reverse side hereof <sup>1</sup> as our standards of practice beginning \_\_\_\_\_

(Date)

----- in the production,<sup>2</sup> distribution,<sup>2</sup> and consumption<sup>2</sup> of the standardized lines.

We will use our best effort to secure their general adoption.

(Cut on this line)

Signed \_\_\_\_\_

Title <sup>3</sup> \_\_\_\_\_

Company <sup>3</sup> \_\_\_\_\_

Street address <sup>3</sup> \_\_\_\_\_

City and State <sup>3</sup> \_\_\_\_\_

<sup>1</sup> Be particular to indicate which commercial standards you are accepting by checking the list on the reverse side of this form.

<sup>2</sup> Please designate by drawing lines through those which do not apply.

<sup>3</sup> Kindly typewrite or print.

## COMMERCIAL STANDARDS

CS No.	Item
--------	------

1-28.	Clinical thermometers.
2-29.	Surgical gauze.
3-28.	Stoddard solvent.
4-29.	Staple porcelain plumbing fixtures.

CS No.	Item
--------	------

5-29.	Steel pipe nipples.
6-29.	Genuine wrought iron pipe nipples.
7-29.	Standard weight malleable iron or steel screwed unions.

(28)

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